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Class, Status, and Education: The Influence of Parental Resources on IEO in Europe, 1893-1987

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Abstract: There is a long tradition of studying the influence of parental background on educational attainment of the offspring. Recently the emphasis in this tradition has shifted to the question of what parental background is. In particular, what contributes to social background, for example parental occupational status, parental occupational class, and/or parental education? Moreover, who contributes to parental background, the mother, the father, or both? In this article we asked the question whether these different components of parental background are stable across time and across countries, or are some components more important in some countries or periods than in other countries or periods. We were able to reject the hypothesis that the contributions of the different components were constant across 29 European countries. In most of these countries we were also able to reject that these contributions were constant over time.

Keywords: Inequality of educational opportunity (IEO); measurement of social origin; dominance method; proportionally weighted regression; sheaf coefficient.

1 Introduction

Over the course of the 20th century major policy interventions were put into place in order to open up the access to education in Western countries, so to favour its role as a factor of social change. As a matter of fact, the influence of social origin on educational attainment is one of the major topics addressed by stratification scholars over the 20th century (Breen & Jonsson, 2005). However the available evidence has not always been consistent in either supporting or disconfirming the hypothesis of a weakening of the forces of ascription and the effectiveness of educational reforms, especially when comparison across countries is considered (Breen, 2004; Breen, Luijkx, Müller, & Pollak, 2009, 2010; Shavit & Blossfeld, 1993).

Some methodological factors might be responsible of (at least part of) the contrasting evidence concerning the role of education in the intergenerational transmission of social position (IEO in short) (see, for example: Beller, 2009; Buis, 2013; Jæger, 2007). Some of the sources of the inconclusiveness of the results attained thus far are: the time span considered, the number and type of countries in the analysis, the measurement strategies, the type of data and the technique of analysis.

In this paper we focus on one of these possible sources, namely how social origin is operationalized, while studying the trend of inequality of educational opportunity in Europe over the 20th century. Building on previous research, we address two methodological issues, that may be responsible for the contrasting evidence on IEO, and that have substantive consequences:

1. Which parent provides information on the social position of the family of origin?
2. When operationalizing social origin, which kind of resource are we to use: the cultural dimension (as measured by parents' education), the symbolic dimension (measured by parents' social status), or the economic one (measured by social class)?

We devote Sections 2 and 3 to the discussion of these two issues, while in Section 4 we illustrate the perspective we take on. In Section 5 we put our research in comparative perspective, while in Section 6 we will state our research questions and expectations, and Section 7 will present our data and variables. In Section 8 we will illustrate the method and technique of analysis used, while in Section 9 we will discuss our results, and finally in Section 10 we will draw the conclusions deriving from our findings.

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2 Which Parent? Social Origin and the Role of Mothers

When it comes to the operationalization of social origin, research on IEO – and possibly on the intergenerational transmission of social position altogether – seems to be characterized by a lack of integration between the theoretical and the empirical level. Traditionally, the social position of the family of origin is equated to that of the father (Treiman, Ganzeboom & Rijken 1998), on the ground that – the family being the unit of analysis in stratification research – family members share the same situation, which can be indexed with reasonable accuracy by the male head of household's social position. This male bias in stratification research (Kalmijn 1994) is reinforced either by practical considerations, since information on mother's occupation or education has started to be collected in relatively recent years (Beller 2009), and participation of mothers (and of women, for that matter) to the labour market used to be episodic (Goldthorpe 1983); or because empirical analyses showed that the bias introduced by considering only father's occupation is relatively small (Korupp, Ganzeboom & van der Lippe 2002).

Excluding mothers from the picture has some substantial implications. First, this amounts to saying that mother's employment status or education does not affect in any meaningful way their children's life chances (Sørensen 1994). However empirical research has already showed that this is not the case. Kalmijn (1994) reports that maternal occupational status is as important as father's when considering the offspring's educational outcomes, and it is so equally for daughters and sons. Beller (2009) finds that taking into account mother's class, in addition to father's, allows to model the intergenerational transmission of the social position in a more accurate way, and hence "using one parent's class position as a proxy for the family-level class position is not an empirically adequate approach" (p. 518). Tomescu-Dubrow & Domański (2010) get to the same conclusion considering the influence of parental education over respondent's education in 21 European countries.

Second, relying on father's occupation as the only indicator of social origin, we do as if the sole type of family in any given society would be the male breadwinner type, in which the male head-of-household has a paid extra-domestic job, while the wife undertakes the reproductive and caring tasks. However this view has been questioned as early as the Sixties (see for example: Watson & Barth, 1964), though it took another 20 years for this claim to be taken seriously (Sørensen 1994). Among more recent analyses, Van Doorn, Pop & Wolbers (2011) show that the variation in the educational attainment across European countries and over time is influenced by the level of female participation to the labour market as a contextual characteristic of the country-cohort combination they analysed.

More generally, the operationalization of social origin calls into question the long-standing debate over the unit of analysis in stratification studies (among others, see: Acker, 1973; Goldthorpe, 1983; Dale, Gilbert, & Arber, 1985; Garnsey, 1978; Sorensen, 1994; Stanworth, 1984). As Beller puts it, "in theory, class background (i.e., childhood class position) is a family-level variable, but the conventional research practice equates class background solely with a father's class position" (2009, p. 507), even if the mother had a paid job when the respondent was 14. Beller (2009) also notes that ignoring the role of mothers in the process of intergenerational transmission of social position could lead stratification researchers to draw misleading conclusions about the actual trend and magnitude of inequality in any given society. Her results actually show that considering only father's class overestimates social fluidity, especially in recent years, when an upturn in the influence of social origin on educational outcomes took place.

The most widely known and used solution to the issue of the inclusion of women into stratification analysis is the dominance method (Erikson, 1984). According to this approach, a family's social position is indexed by the highest ranking occupation among those of the two spouses, in dual-earner families; in male breadwinner ones, the use of the social position of the head of household is considered to be unproblematic.

However brilliant and easy to adopt this solution is, it leads to a limited change in the way a family's position is assigned, since not many women (either wives or mothers, and more so in the latter case) have a better job than their spouses[1]. As a result, the social position of the family still largely coincides with that of husbands', or fathers', thus obliterating *de facto* the claims for the family instead than individuals to be the adequate unit of analysis of stratification studies. Actually Albright defines the dominance method "an updated version of

1 Considering a continuous measure, whose values are perfectly scalable, in the ESS (European Social Survey) data we used for our analyses only 25% of mothers on average have a better social status than fathers. In some countries (Ireland, Italy, Spain) this proportion gets as low as 12%-14%; at the opposite end, in some of the former communist countries (Czech Republic, Estonia, Russia) it gets as high as 43%-48%.

the conventional approach" (2008, p. 1674), thus stressing its contiguity with the usual practice of excluding women (either as respondents or as mothers) from the picture. Moreover, Beller (2009) claims that a good reason not to use the dominance method is that parental resources may vary according as to whether either one or both parents work (Sørensen 1994).

On an empirical ground, Korupp, Ganzeboom and van der Lippe (2002) show that – contrary to Erikson's (1984) findings – the non-dominant parent still exerts some influence on the status attainment process. Their conclusion is that information on the social position of both parents is necessary for adequately describing the status attainment process, since using only father's occupation leads to the underestimation of the actual influence of social origin on destinations. A similar conclusion has been reached by Meraviglia and Ganzeboom (2008), who find that, in the case of Italy, ignoring mother's influence leads to overestimation of both social fluidity and the speed with which inequality decreases over time.

On a methodological ground, doing as if all mothers would not have a paid job amounts to drawing a faulty generalization, since the results that would fit respondents who were actually raised in a male breadwinner family are extended to all respondents, including those whose mother had a paid job when they were 14 years old. Furthermore, as Beller (2009) notes, the potential damage caused by this approach may become serious in the case of comparative research, since variation across countries, cohorts, or other groups could be due to methodological reasons (namely, the bias introduced by measuring social origin only with father's social position) and not to substantive (and interpretable) ones.

Most importantly, as Sørensen notes, women's invisibility in stratification analysis does not follow from the theoretically grounded choice of considering the family, instead than the individual, as the unit of analysis. A different direction of research would be "maintaining the assumption of the family as the unit, but changing the measurement of the status of the family" (1994, p. 29). This different direction stems, we believe, from additional considerations regarding the measurement of social origin, as we develop them in the next section.

3 Which Resource? Education, Class, and Status

The second issue concerning the way in which social origin is routinely operationalized in IEO studies has been recently highlighted by some authors (Buis, 2013; Bukodi & Goldthorpe, 2013; Jæger, 2007; Marks, 2011), who drew the attention of stratification scholars to a second discrepancy between theory and practice. In theory, it is maintained, social background is a multidimensional concept; however in practice it is usually indexed by a single indicator, be it parental class, education, or status, which is assumed to be sufficient at this task.

Some studies use composite measures (see for example: Duncan, Featherman, & Duncan, 1972; Sirin, 2005)[2]; though their use in cross-national comparisons, as well as in the study of trends over time, may be problematic, however they explain a larger portion of the variance of the outcome variable (White 1982). As Marks (2011) notes, this means that using a single measure is not enough to account in a satisfactory manner for the influence of social origin on education.

Some other studies use both parental occupation and education (for example: Marks, 2008a; Shavit & Westerbeek, 1998); this may bring different conclusion concerning the IEO trend over time, depending on which parental variable is considered (like in Shavit & Westerbeek, 1998). However it is clear that little homogeneity exists both at the conceptual and the empirical level (Marks 2011).

Recently some studies added knowledge to the topic. Jæger (2007) contends that class is a structural concept, whose use at the individual level is problematic, because at this level class is a proxy of many family background characteristics, such as income, cultural background, social assets, and the like. Furthermore, according to this author, on the empirical level class might be correlated with unobserved family characteristics also affecting educational outcomes. This determines an overestimation of the effect of class origin, and the blurring of the actual trend over time of inequality of opportunities.

The conceptualization of social origin is the main focus of the analysis of Bukodi and Goldthorpe (2013). Referring to Jæger's (2007) claims, these authors reject the idea that class picks up unmeasured characteristics of the family of origin. Rather, they propose to consider class as an indicator of purely economic background, and to complement it with indicators of two other kinds of household resources, namely education and social status. Their analysis of British data shows that the three indicators of social origin cannot be used interchangeably,

2 Marks (2014, forthcoming) notices that other indicators of social background can also be occasionally used, especially as components of composite measures, such as household possessions, books in the home, family size, number of siblings, home ownership (see for example: Jæger, 2007).

since each of them has a distinctive and independent effect on the offspring's educational attainment. However Bukodi and Goldthorpe's study use the dominance approach, then excluding *a priori* that mothers may have a distinct effect on the educational attainment of their offspring.

A similar perspective is adopted by Buis (2013). This author conceptualizes social origin as the outcome of both parental occupational (operationalized by socio-economic status) and educational resources; in addition to that, he explicitly considers the contribution of both parents in influencing their offspring's education. Analyzing Dutch data, Buis finds that parents' education contribution in shaping IEO amounts to (slightly less than) two thirds of the effect of parental occupation, the two resources having a distinct role in the process of reproducing inequality. Moreover, in his results it does not matter which parent brings in the resources, as long as the mother also has a paid job. Finally, no support for the conventional view, according to which fathers provide all the essential information on social background, was found.

From the stance we take in the present paper, the study by Buis (2013) has the shortcoming that social origin - though being conceptualized and operationalized as a multidimensional concept, as we envisage it - is indexed by socio-economic status, through the ISEI (Ganzeboom & Treiman, 1996). The drawback we see in this measure is that it synthesizes both the occupational and the educational dimension, whose contribution to the reproduction of inequalities we seek to analyse separately.

4 Social Origin Revised

In our view, the operationalization of social origin should follow more closely from its conceptual status. Research has shown that virtually any measure of social origin (parental education, class, social status, socio-economic status, prestige, either of the father, or in a dominance approach, or of both parents) has an effect on the offspring's educational attainment. However few studies have considered the possibility that the different indicators may refer to different channels or aspects of social origin (Marks 2011), and that they may not substitute one another, but rather cumulate their effect, as previous empirical evidence suggests (Mare 1981; Kalmijn 1994; Conley 2001; Korupp, Ganzeboom & van der Lippe 2002; Lareau 2003; see also Buis 2013).

This also holds for the contribution of mothers and fathers to the shaping of educational strategies (Beller 2009). It is reasonable to assume that two well-educated parents make a difference in educational choices, compared to having only one well-educated parent. Furthermore, if the well-educated parents hold a service class occupation, this is likely to differentiate the offspring from that of well-educated parents having a routine nonmanual job, precisely in terms of what matters for making educational choices (more money available for the extended periods spent in the education system, or for attending prestigious schools; more realistic expectations of future returns, and hence a more accurate consideration of tracks within the educational system; knowledge of what it takes to enter élite occupations), and thus for preserving their relative advantage[3].

From these considerations follows that we see social origin as a multidimensional concept, whose dimensions are the economic, the symbolic and the cultural one, and to which both parents contribute. In this view, the family of origin is the *locus* where the different resources, brought in by both parents, blend together to form the peculiar mix which influences the offspring's educational attainment through various mechanisms.

Conceiving social origin as stemming from the interplay of its dimensions (cultural, economic and symbolic) and components (maternal and paternal) has some theoretical and practical advantages[4]. Firstly, since using different single indicators exposes the researcher to the risk of drawing biased conclusions (Marks 2011), considering all indicators of social origin at once keeps under control a major source of potential bias, which may turn out to be severe in cross-national comparisons. Secondly, there is no need for the analyst to choose how to enter into his/her model maternal variables: though useful on a practical ground, the dominance method is somehow unsatisfactory on the theoretical one, as we argued previously, since paternal and maternal influence seem to cumulate. Hence choosing either parent, or even discarding the gender of the parents and considering the higher or the lower status/education parent, brings some more bias into the analysis. In this respect, our conceptualization of social origin takes into consideration the above-mentioned suggestion by Sørensen (1994), according to which we do not necessarily have to choose between families and individuals as the fundamental unit of analysis in stratification studies, rather we should change the way we measure the status (*latu sensu*) of a

3 A micro-level theory in line with these statements would be that of effectively maintained inequality (Lucas 2003). However a discussion of these topics falls outside the scope of our analysis.

4 We will deal with the methodological advantages of our conceptualization later on in Section 8.

family, a way not excluding mothers (or women) from the picture.

Let us now consider individually each resource contributing to shape social origin. Given its association with income security, income stability and income prospects (Goldthorpe & McKnight 2006), we follow Bukodi & Goldthorpe (2013) in considering class as an indicator of the economic resources of the family of origin. Its influence on educational attainment could unfold in various ways. Occupations differ as for time available to spend with children at home (and even feelings of appropriateness about the amount of time spent with children; see Milkie et al. 2004), as well as for the degree of stressful work-conditions, and of course for income. Stressful work conditions could lead to tensions at home, or even to divorce, which in turn influences education (see for example Jonsson & Gahler 1997). Income can influence not only the money parents are able to allocate to children's education, but also which school children go to, the living conditions at home (e.g., whether the children have a quiet place for doing their homework) and whether the family can afford living in a neighborhood with quality schools.

The symbolic dimension is referred to by social status. In a Weberian perspective (Weber 1922), status is the standing an individual, a family or a group holds in a given social community, which drives considerations and behavior about whom to meet socially, whom to marry, the appropriate life style, the proper neighborhood where to reside, the symbols used to convey the status level, and so forth. Basically social status refers to the social distance an individual wishes to keep from others, depending on whether they belong to his/her same stratum or not, and hence also captures the provision of the family in terms of social capital.

Finally, following the Bourdieusian tradition (Bourdieu & Passeron 1970), and as some scholars did before us (see among others: Halsey, Heath & Ridge 1980; Robinson & Garnier 1985; Jonsson 1987), we consider parental education to index the cultural dimension of the family of origin. As a matter of fact, as Sullivan (2001) notes, Bourdieu did not define nor operationalize the concept of cultural capital very clearly; however empirical research has shown that education is clearly one of its components. For example, De Graaf, de Graaf & Kraaykamp (2000) find that parental *beaux-arts* participation is not linked to academic success of the offspring, while parental reading behavior is; according to the authors, this shows that "the effect of cultural capital on educational attainment is due to the 'educative resources' such as analytic and cognitive skills which are developed by reading" (De Graaf, de Graaf & Kraaykamp 2000, p. 897). Moreover, well-educated parents provide a better environment for their children than low-educated ones (Sayer, Gauthier & Furstenberg 2004), so that their children more readily acquire the skills valued in school, and develop expectations of future rewards coming through education, which makes them do well in school, thus making it more likely to stay in the education system (Treiman, Ganzeboom & van der Lippe 1997). In addition to that, better educated parents have a better knowledge on how to maneuver within the educational system and supplement teachers (Breen & Goldthorpe 1997).

5 Variation of IEO Over Time and Across Countries

The primary focus of the research reported here is to contribute aligning the theoretical and the empirical level in stratification research by bringing more complexity and depth into the measurement of social origin. However our analysis also has a comparative character, in that we consider the effect of social origin on educational attainment in 29 European countries. In doing so, we aim at testing our way to conceptualize and operationalize social origin in as many diverse social, cultural and political contexts as possible, in order to offer the reader the broadest evidence concerning this issue. Hence, though the between-countries comparison of IEO over time is not our main topic, our analysis would be incomplete, were we not to pay attention – albeit in a rather cursory way - to the issue.

On a macro-level, modernization theory is the most often invoked background in cross-national comparisons concerning inequality of educational opportunity. The theory (see Blau & Duncan 1967; Treiman 1970) contends that industrialization and modernization increase, the role of social origin on educational attainment becomes weaker, since an increased rationality in the labour market on the side of the demand would call for a closer match between workers and jobs, so that the better prepared workers would be allocated to better jobs, irrespectively of their social origin (van Doorn, Pop & Wolbers 2011). This in turn means that education becomes the key social mechanism that sorts people and jobs.

Evidence related to the modernization theory is mixed. As it is well known, Shavit & Blossfeld (1993) did not find sufficient support for it; on the other hand, some other studies show some evidence in its favor (Ganzeboom and Treiman 1993; Treiman, Ganzeboom & Rijken 1998; Buchman & Hannum 2001; van Doorn, Pop & Wolbers

2011). In general results vary greatly according to the countries analysed, with Scandinavian countries being more equal than Central or Southern European countries (Jaeger 2007; Jonsson & Erikson 2000; Jonsson, Mills & Müller 1996; Lindbekk 1998).

Competing explanations of cross-country variations in IEO at a macro level focus on structural features of the educational system, or on political ideology. Müller & Karle (1993) find that the inherent structure of educational systems and the way they select students at each transition explains most of the variation between countries. Further evidence concern rigid educational systems (namely, those which sort students in strictly parallel tracks), which tend to foster inequality more than flexible ones (in which students can migrate from one track to the other) (Pfeffer 2008). Countries with higher expenditures in education seem to be characterized by lower and decreasing levels of inequality, while educational systems with longer compulsory school, higher teacher/pupil ratio, higher accessibility of the schools are not associated with lower education (van Doorn, Pop & Wolbers 2011). Studies concerning political ideology compare former soviet to non-soviet countries (Ganzeboom & Nieuwbeerta 1999) and reach mixed evidence (see among others: Ishida, Muller & Ridge 1999; Treiman, Ganzeboom & Rijken 1998; van Doorn, Pop & Wolbers 2011).

As Breen & Jonsson (2005) note, one of the weaknesses of the studies on IEO in a comparative perspective is that often the data basis is heterogeneous, in that the sampling frame, the time span covered, the measurement options differ more or less markedly between countries and across surveys, thus introducing a potential source of bias in the analysis. The comparative project put in place by Shavit and Blossfeld (1993) marked an important step towards the necessary standardization of the methodological factor potentially affecting substantive conclusions on inequality across countries. However that project lacked full harmonization in the data collection process and in the building of the key measures (social origin, attained educational level) (van Doorn, Pip & Wolbers 2011), so that full cross-national comparisons are hindered.

The analysis conducted by van Doorn, Pip & Wolbers (2011) bridge this gap by using rounds 1 to 3 of the European Social Survey (ESS), which harmonizes data collection procedures, sampling frames and derivation of the key variables from the collected information[5]. However, from the standpoint we adopt in our analysis, their study operationalizes social origin in quite a conventional way, using only parental education as an indicator of social origin, obtained through a dominance approach.

6 Research Questions

The literature review we outlined above intended to highlight the strengths and weaknesses of previous research in the perspective adopted here. Let us now proceed further and detail our own approach.

Our contribution to the debate is three-fold. Firstly, we intend to bring mothers into the analysis, in order to ascertain whether they contribute to the dynamics of IEO, and to what extent. Actually we think it is time to assess with the aid of empirical data whether they can be safely omitted from analyses on IEO, without this biasing our results, or whether, under what conditions and in which form we should consider their contribution when modelling the educational attainment process.

Secondly, as we said, we consider social origin as a multidimensional concept, which entails different kinds of resources brought to the family by both parents. Accordingly, we operationalize it by means of parental class, education and status, so that social origin will be represented by six indicators (three components for each parent). As far as we know, our study is the first one being so comprehensive in the way in which social origin is measured.

Third and last, we intend to broaden the boundaries of previous studies which adopted a similar perspective (Bukodi and Goldthorpe 2013; Marks 2011; Buis 2013) by analyzing the IEO trend over time in 29 European countries and by using high-quality data, which allow cross-national comparisons.

Our research questions, and the related expectations, can be stated as follows:

1. First of all, we expect the relative weight of the components of social origin to vary across countries and over time. In other words, we hypothesize that the composition of the mix of family resources influencing education is expected to have changed over the last century in our 29 countries.
2. Do the three components of social origin (parental status, education, class) have a distinct influence on education?
   - 2.1. Following Bukodi and Goldthorpe (2013), we expect each component to show a distinctive contribution in shaping the IEO trend over time, so that their effect cumulates (Beller 2009; Kalmijn 1994).

5 Actually the ESS does not recode the open-ended answers on parental occupation into an ISCO code (either ISCO-88 or, more recently, ISCO-08), this being a possible reason behind the choice made by van Doorn, Pip and Wolbers (2011) of measuring social origin through parental education, instead than occupation.

2.2. Based on previous evidence (Gesthuizen, de Graaf, and Kraaykamp 2005; Buis 2013; Bukodi and Goldthorpe 2013) we expect parental education to be more relevant than parental class or status. On the other hand, we do not have a precise hypothesis concerning whether parental status or class will be more relevant for IEO.

3. Do mothers have a specific influence, relative to fathers, on the IEO trend over time and across countries? If so, did mother's influence remain stable, compared to father's, or gain or lose strength?
   3.1. We expect to confirm previous results (Treiman & Terrell, 1975; Rosenfeld, 1978; Khazzoom, 1997; Korupp, Ganzeboom, & Van Der Lippe, 2002; Meraviglia & Ganzeboom, 2008; Buis 2013) by finding that mothers have a specific role in the process of educational attainment, either through their education and occupation, or – when homemakers – through their education. Moreover, a reasonable expectation is that their role increased over time at the expense of father's influence, as previously found (Kalmijn 1994; Meraviglia 2013).
   3.2. We also expect mother's education to be more influential in male breadwinner families of origin than in dual-earner ones, since in the latter context maternal education conveys all the influence mothers can exert on the educational performance and choices of the offspring.
4. Did IEO decrease, increase or remained stable over time and across countries?
   4.1. Following recent work on IEO in Europe (Breen et al., 2009), we expect that IEO decreased over time in all countries, though at a different pace.

7 Data and Variables

Our data set comes from rounds 1 to 5 of the European Social Survey. Cases were selected first on the basis of age (from 25 y.o. on), then according to the availability of valid information on the relevant variables (see later on). After selection we obtained a total of 153261 valid cases distributed in 29 countries (Tab. 1). Since not all countries took part in all ESS rounds, some of them (like Germany and Greece) provide more data than others (like Italy and Luxembourg)[6].

In all our models the dependent variable is education. The ESS has three partly independent measures of educational attainment: a country-specific measure; a harmonized variable based on country-specific measures, and fitting the ISCED (depending on the year of survey, either the ISCED-97, or the improved ES-ISCED version); and a measure of duration (years of education, or eduyrs). Leaving aside the country-specific measures as inadequate for comparative purposes, we chose to use the duration measure as the starting point for building our dependent variable.

However, since years of education has been variously criticized as a valid measure of educational attainment, especially in comparative research (Hout and DiPrete 2006; Schneider 2009; Müller 2008), we use this information to obtain a measure recently developed by Schröder and Ganzeboom (2014), namely the ISLED (International Standard Level of Education)[7]. Grounding their work on the classic status attainment model by Blau and Duncan (1967), and on the theory of education as a positional good (Hirsch 1976), Schröder and Ganzeboom conceptualize education as the intervening variable between parental resources (education and occupation) and respondent's occupation, so that education level is "the scaling of education that best accounts for the conversion of social resources into social outcomes" (2013, p. 5). The authors find that the ISLED improves in terms of validity both the categorical variable (i.e., the ISCED) and the duration measure (i.e., years of education) present in the ESS data, by a 10-11% margin.

The ISLED measure was also computed to account for father's and mother's education, as two independent variables in our models accounting for the cultural dimension of social origin.

As for parental occupation, the ESS routinely collects information on occupation by means of an open-ended question, both in the case of parental occupation when at respondent's age of 14, and in that of respondent's and spouse's occupation. However, while the latter two are coded into ISCO-88 (more recently, in ISCO-08) and made available with the standard data file, the information concerning parental occupation is not coded by national teams, nor made available to the general public. In order to overcome this drawback affecting stratification researchers using the ESS data for comparative purposes,

6 In all our analyses data are weighted using the *dweight* variable present in the original ESS data set.

7 Additional documentation has been made available by the ISLED authors at http://www.harryganzeboom.nl/ISLED/isled_ESS1234.pdf. All ISLED variables in this paper have been built using the syntax made available by Schoeder and Ganzeboom at the following address: http://www.harryganzeboom.nl/ISLED/isled_ess56.txt

Table 1 Valid cases by country and ESS round

	1	2	3	4	5	Total	%
Austria	1577	1418	1497	0	0	4492	2.9
Belgium	1105	1129	1189	1191	1128	5742	3.7
Bulgaria	0	0	981	1810	1993	4784	3.1
Switzerland	1212	1671	1441	1383	1113	6820	4.4
Cyprus	0	0	768	983	888	2639	1.7
Czech Republic	990	1922	0	1473	1744	6129	4.0
Germany	1987	1872	1855	1872	2061	9647	6.3
Denmark	1114	1159	1171	1234	1183	5861	3.8
Estonia	0	1357	560	951	1029	3897	2.5
Spain	1138	1038	1285	1861	1360	6682	4.4
Finland	1372	1440	1386	1647	1479	7324	4.8
France	958	1209	1350	1423	1202	6142	4.0
United Kingdom	1290	1115	1514	1511	1168	6598	4.3
Greece	2045	2018	0	1683	2221	7967	5.2
Croatia	0	0	0	658	942	1600	1.0
Hungary	1033	1163	1071	1055	1125	5447	3.6
Ireland	1287	1499	971	1301	1627	6685	4.4
Israel	1314	0	0	1507	1323	4144	2.7
Italy	722	1038	0	0	0	1760	1.1
Luxembourg	826	1024	0	0	0	1850	1.2
Netherlands	1707	1397	1383	1311	1338	7136	4.7
Norway	1552	1355	1335	1181	1179	6602	4.3
Poland	1320	1055	1046	1063	1182	5666	3.7
Portugal	1118	1492	1706	1693	1539	7548	4.9
Russia	0	0	1364	1453	1509	4326	2.8
Sweden	0	0	1094	1300	1027	3421	2.2
Slovenia	782	0	817	603	730	2932	1.9
Slovakia	0	850	1119	1410	1430	4809	3.1
Ukraine	0	1207	1140	1123	1141	4611	3.0
Total						153261	100

Ganzeboom and Nikoloski (2012) made available the ISCO-88 code of parental occupations*8*, which has been used to build parental class and status measures.

In our models class origin accounts for the economic dimension of social origin, and is operationalized by the EGP class schema (Erikson, Goldthorpe, & Portocarero, 1979) in its version with six classes (I, II, III, IV, V+VI, VII). In the case of mothers, an extra category was added to account for mothers who did not have a paid job. More detailed versions of the EGP schema were also a possible choice, however they would have determined table sparseness in most countries, as well as the estimation of a relevant number of parameters and interaction terms, which would have been difficult to master and summarize[9].

As for parental status, which refers to the symbolic dimension, we use a recently developed measure, the ICAMS (International CAMSIS Scale) (de Luca, Meraviglia, & Ganzeboom, 2012; Meraviglia & de Luca, 2013),

8 Reference to this can be found in the ESS Developmental Project #3 *Improving the Measurement of Social Background in the European Social Survey*. Documentation and syntax files used for coding parental occupation are available at http://www.harryganzeboom.nl/ESS-DEVO/index.htm.

9 The final model we estimated already counts nearly 500 parameters, which would have become significantly more numerous were we to use a more detailed class schema.

specifically designed for international comparisons[10]. We are well aware that an alternative, valid and widely known measure such as the ISEI (Ganzeboom & Treiman, 1996) is available. However ISEI is not a true social status measure, in that it embodies reference to both education and occupation, which we consider as separate resources provided by the family of origin. Were we to use the ISEI, we would blur the boundaries between the three dimensions of social origin as we defined them, thus obliterating one of the major goals of our analysis.

Mother's and father's status have been built once again using the ISCO-88 code provided by Nikoloski and Ganzeboom (2013). Tab. 2 shows the average ICAMS score and standard deviation by father's and mother's class; as can be seen, the ICAMS scores decrease in an orderly fashion from class I to class VIIab.

Table 2 ICAMS average score by EGP class

	Mother		**Father**	
Egp class	*mean*	*s.dev.*	*mean*	*s.dev.*
I	72.1	0.10	71.7	0.06
II	62.8	0.06	60.7	0.05
IIIab	50.7	0.06	50.7	0.08
IVabc	39.6	0.10	42.5	0.07
V+VI	35.3	0.05	34.8	0.03
VIIab	29.4	0.04	32.3	0.03

A crucial variable in all analyses on the IEO trend is obviously time. We measured it using birth years, which were rescaled in order to have the time span centred around the year 1950 in all countries, and so to make integers correspond to decades. Our oldest respondents were born in 1893, while – due to age selection – the youngest ones were born in 1987; hence, almost a century is covered by our data. In order to take into account possible (moderate) nonlinearities in the effect of social origin on educational attainment, we entered birth years in our models as linear splines, with knots at 1940 and 1960.

Our models also include a dummy variable indicating whether the mother had a paid job when the respondent was 14 y.o., in order to distinguish between male breadwinner and dual-earner families of origin. Another set of 28 dummies identifies the various countries.

8 Method

From a modelling point of view, we can think of all the six variables indexing social origin (dimensions: education, status, class; and components: mother and father) as forming a latent construct, which exerts its influence over educational attainment. The latent construct would then be an intervening factor in between the observed indicators of social origin and the educational outcome (Fig. 1).

On the conceptual level, positing the existence of a latent factor offers some advantages. Firtsly, social origin need not to be split in its constituent components and dimensions. All three dimensions (education, status and class) and two components (maternal and paternal resources) combine to form a unique construct, which exerts its influence on educational attainment. This allows us to keep analytically separated the latter influence from the individual contribution of each dimension and component. This amounts to translating into a model the idea that a pooling and sharing of resources takes place in families (Sørensen 1994), which form the mix of resources at their disposal and to which both parents contribute. This mix of resources influences the offspring's educational attainment as a whole, while the composition of the mix itself (ie., the relative weight of each resource-by-component) is modelled separately.

Secondly, and equally importantly, by hypothesizing a latent construct which conveys maternal and paternal influence on education, we take seriously the claim that the unit of analysis in stratification research needs to be the family – in our case, the family of origin. Maternal and paternal influences are pooled together, whereas – even when they are both taken into consideration – they are usually modelled as having an individual effect on education. We do consider their individual contribution to the offspring's educational attainment, however this influence runs indirectly through the latent construct, which models an intervening stage at which individual

10 Since it is not well known yet, we briefly describe ICAMS main features. The ICAMS has been developed on data coming from surveys conducted in 41 countries by the International Social Survey Programme (ISSP) from 2001 to 2007. It is modeled after the Cambridge Social Interaction and Stratification Scale (CAMSIS) (Prandy, 1990; Stewart, Prandy, & Blackburn, 1973; Stewart, Prandy, & Blackburn, 1980), which relies on the association between the occupation of spouses (originally, of friends) to infer the underlying social structure. The ICAMS has proven to be as valid an indicator of social position as the ISEI, and a more valid one than the SIOPS (Treiman, 1977); indeed, it proved to be as valid or even a better indicator of national versions of the same scale (Meraviglia & de Luca, 2013). While the Cambridge group maintains that the Camsis scale refers to a stratification order which is different from that described by status or prestige, Meraviglia and colleagues see the ICAMS as a status measure, in that it refers to the weberian notion of status as regulating *connubium* and commensality (see de Luca et al., 2012 for a similar interpretation). More information on the ICAMS project is available at http://www.camsis.stir.ac.uk/versions.html.

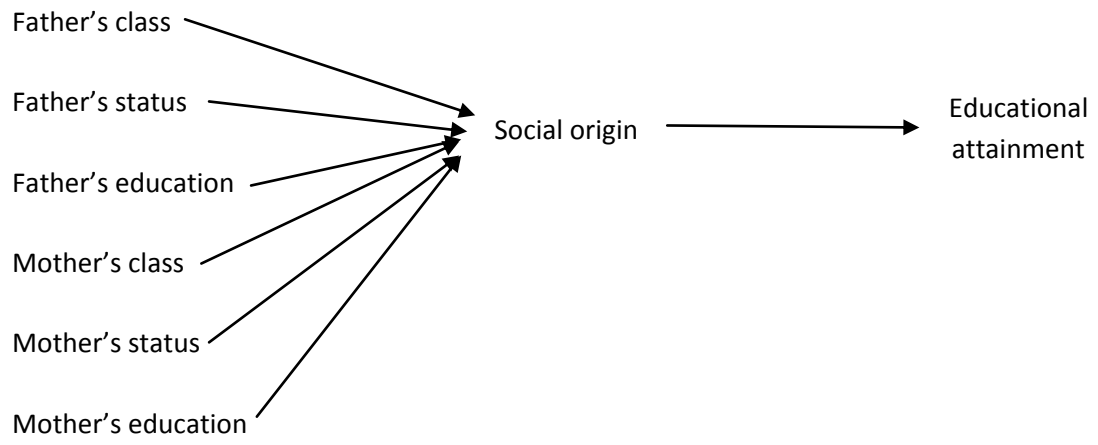


Figure 1 The measurement model

resources blend together to produce a joint outcome, namely, the family's educational strategies, and hence the offspring's educational outcomes.

From a more formal standpoint, an appropriate reference in this framework is to formative measurement models (Blalock, 1964; Bollen, 1984; Bollen & Lennox, 1991; Edwards & Bagozzi, 2000), according to which the observed indicators influence (and form) an unobserved latent variable, which in turn influences the dependent variable. Hence while in reflective models, like those implemented by structural equation models, the unobserved latent variable exerts its influence on the observed ones, determining their values and reciprocal correlations, in formative models the causal relationship flows in the opposite direction. This kind of models mirrors exactly the way in which we conceptualize social origin as formed by our six indicators (father's and mother's class, education and status) which, so to say, pool together to influence educational attainment.

As usual, we want the relationship between origin and education to vary over time and across countries (as well as according to gender, as we will explain shortly)[11]. Variation over time is needed in order to assess whether inequalities have reduced over the last century; variation across countries is needed in order to allow country-specific features to be kept under control, while not confounding the effects we are interested to observe.

The technique of analysis suited to implement this kind of models is parametrically weighted regression (Buis, 2013; Yamaguchi, 2002), which is a special case of the model estimating the sheaf coefficient (Heise, 1972; Whitt 1986), as well as of the MIMIC model (Hauser & Goldberger, 1971). Its main features can be described as follows. A latent variable is hypothesized to exist, which exerts its influence on the dependent variable. The latent variable is formed by observed indicators, each of them having a score representing its influence on the latent variable. The effect of the latent variable is hypothesized to vary according to one or more specified variables (typically, time); however the relative weight of each indicator variable (i.e., the ratio between any two indicator variables) remains constant.

In our case, this amounts to let the influence of social origin free to vary over time, country and gender, while keeping constant the relative weight of each parental resource in respect to each other. Otherwise said, imagining that father's education was twice as relevant as mother's education at the beginning of the 20th century, this relationship between the two components is bounded to remain stable over time[12]. What is free to vary is the influence of the latent variable (i.e., social origin) on education. In Fig. 1, then, the relative weight of the arrows from the observed indicators to the latent social origin variable are held constant, while the arrow between the (latent) social origin and education is free to vary.

In sum, a parametrically weighted regression model has three types of variables: the formative indicators, i.e. the observed variables that form the latent construct; the "trend" variables, i.e. the variables over which the effect of the latent construct is supposed to vary; and the covariates, which usually include the main effects of the "trend" variables.

11 We estimated our models pooling together women and men, instead than running separate analyses for the two genders. We believe our strategy offers the advantage of allowing a direct test of the hypothesis that any possible differences between genders is statistically significant, which we could not do otherwise.

12 Actually the "trend" variables in our models will include not only time, but also country and gender, and the two- and three-way interactions between them. For the sake of simplicity, in this illustration of the model we refer to time as if it were the only trend variable.

Hence our model includes the following variables and effects:

- Covariates: gender, time, country, and their interactions, which account for the country-specific differences in the trends of educational expansion (country X time), in the female participation to the educational system (country X gender) and how that participation varies over time (country X gender X time);
- Trend variables: gender, time, country and their interactions;
- Formative indicators: father's and mother's education, class and status; a dummy variable for mother working or being a homemaker at respondent's age of 14; the interactions between father's status and the dummy variable, and between the latter and mother's education.

More formally, our model can be expressed as follows:

$$y_i = \beta_0 + \sum_j \beta_j t_j + \left(1 + \sum_{im} \beta_m t_{im}\right)\left(\sum_k \gamma_k z_k\right) + \varepsilon_i$$

where:

$\sum_j \beta_j t_j$ represents the contribution of the covariates (main effects of the "trend" variables);

$\left(1 + \sum_{im} \beta_m t_{im}\right)$ represents how the effect of the latent variable changes depending on the trend variables;

$\left(\sum_k \gamma_k z_k\right)$ represents the effect of the observed variables on the latent construct, which in turn influences the dependent variable.

Given the specification of the model, the coefficients of the latent variables are allowed to change along with the "trend" variables, while the relative size of the effect of the observed variables on the unobserved latent variable are constant (Yamaguchi, 2002). This amounts to imposing a proportionality constraint on these coefficients, so that the ratio between any two of them (e.g., g_{i1} / g_{i2}) remains constant over the "trend" variables. In our case this means that this ratio remains constant in respect of time, gender, country, and the interactions among them (Buis 2013).

The parametrically weighted regression model tests a hypothesis concerning the proportionality constraint (Buis 2013). In other words, the null hypothesis is that the relative size of the effects of parental resources did not change over time, across countries and gender, while the alternative hypothesis relaxes the proportionality constraint, thus getting a standard regression model with all the interaction terms between the formative indicators and the "trend" variables. The assessment of the goodness of fit rests on the comparison between the constrained and the unconstrained model, conducted on the basis of the Wald test (Buis, 2013).

An additional feature of our modelling strategy concerns the way in which we summarize the effect of father's and mother's class on the latent variable. As usual, we entered class as a set of dummy variables representing the effect of each class in respect to class I, which serves as the reference category. Then the role of father's and mother's class is distributed across 5+6 parameters[13]. However one of the goals of our analysis is to evaluate the relative weight of each parental resource as a whole, in order to assess whether education, status and class have a specific role in the educational attainment process, and to measure it.

While being fully aware that one of the advantages of using class categories is precisely that its coefficients are able to pick up possible nonlinearities in the relationship under consideration, we also need to overcome the discrepancy between our research goal (having a sense of the whole impact of class on education) and the constraints imposed by the technique of analysis. As a solution, we post-estimated a sheaf coefficient for each parents' class, so to arrive at a single figure summarizing their effect on the latent variable representing social origin, and thus their contribution to educational attainment[14].

As we said, we include gender among our covariates, while at the same time allowing the influence of social origin vary between women and men; gender also enters all the 2- and 3-way interactions in these two groups of variables (covariates and trend variables). This analytic strategy allows us to consider all possible sources of between-country and over-time differences in our data, at the same time allowing to test directly the hypothesis that the difference between the two genders as to how the influence of social origin on education develops over time and cross-nationally is significant.

As a final note, we wish to underline a fundamental advantage of modelling strategy we put in place. It may seem unduly complex to work with a highly demanding model (in terms of the assumptions required), which includes a host of interaction terms and effects, resulting in hundreds of parameters. Nonetheless, complexity is

13 Recall that in the case of mother's class we added an extra category for mothers who did not have a paid job; therefore, the number of class categories become seven, instead of six, and the dummies entered in the regression models become six, instead of five.

14 By calculating the sheaf coefficient for class, we decompose the coefficients estimated by the proportionally weighted regression for each class category (let's say, b) into two components: the sheaf coefficient itself (b), which expresses the effect of, say, the latent variable "mother's class"; and a coefficient (g) representing the effect of each mother's class category on the latent variable "mother's class". The relationship between the three quantities is the following: b = b * g .

inherent in the subject we study, and forcedly simplifying it may mean not being able to get the right picture from the data at hand. As a matter of fact, simpler techniques of analysis either may not allow the researcher to test all hypotheses at once, having to partition the task in several pieces, thus running the risk of missing the overall picture; or they may force the researcher to take steps towards discarding valuable information in the data[15]. By using parametrically weighted regression with the specifications we previously illustrated, we intend to align (in just one of the possible ways, of course) the conceptual and the methodological complexity of our analysis, while retaining full analytical clarity in testing the various hypotheses.

The parametrically weighted regression has been estimated in Stata (StataCorp, 2012) using the propcnsreg package (Buis, 2007)[16], while the sheaf coefficient has been estimated using the sheafcoef package (Buis, 2007).

9 Results and Discussion

9.1 The Relative Weight of Parental Resources

The model estimated on the pooled sample, formed by the 29 countries, does not fit our data (F(4673, 148024)=1.52, p=0.00). This confirms our expectation **Errore. L'origine riferimento non è stata trovata.**, according to which the relative weight of the dimensions and components of social origin did not remain stable over time in the European countries considered. In turn, this means that the mix of resources that families had at their disposal over the 20th century varied, either because the relative weight of status, class and education did so, and/or because the relative influence of fathers and mothers changed over time.

On a methodological level, the refusal of our model means that the interplay of the resources that – in our view – form social origin cannot be summarized by a latent variable having the specification we mentioned earlier, namely that the weights of the indicators forming the latent construct remained constant relative to one another over time, and across genders and countries. This result leaves open the question of how to operationalize the resource mix that form social origin, however without saying anything on the relevance of each resource and each parent for the process of educational attainment of their children. As we will see shortly, this applies to most of the countries we analysed, but not to all of them.

Indeed the conclusion we reached is rather general, and does not offer any insight on the *locus* where the change took place, nor on the possible differences between countries or genders[17]. For this reason we took a second step and estimated an equivalent model on each country individually (provided all effects and interactions concerning countries have been removed)[18]. The results are shown in Tab. 3; as we see, the model fits in 11 out of 29 countries (white rows in Tab. 3), is almost fitting in 4 countries (light gray rows), while does not fit in the remaining 14 countries (dark gray rows).

By looking at the results from a socio-political perspective, some regularities can be singled out. First, we note that the former-soviet European countries fall into the third group, for which our model does not represent an adequate summary of the IEO trend over the last century. Exceptions to this pattern are Slovenia and Estonia, since in both countries the model fits, while Croatia shows a borderline result (p=0.01). Another rather homogeneous cluster of countries in which our model does not fit is formed by Belgium, Luxembourg and the Netherlands.

A second remark concerns Northern European countries: in three Scandinavian countries (Norway, Sweden, Finland) the model adequately represents the data, as well as in the UK, while in Denmark it does not. Among the countries in which the model fits, we find some Central and Western countries (Austria, France,

15 Actually the latter seems to be the strategy chosen by Bukodi and Goldthorpe (2013), who had to simplify the coding of their core variables in order to keep to manageable proportions the task of testing the relative importance of class, status and education. For the same purpose, these authors restricted their report to results relative to only one of the six educational transitions they considered, ie. that between having a secondary or higher degree *versus* having a lower one.

16 The proportionally weighted regression has been estimated using the –nl- command in Stata, which performs a nonlinear least squares regression. The F-test values, which we will report in the next Section, derive from the comparison of the sum of squares of that model with the sum of squares of the unconstrained model, ie. the model in which no proportionality constraints and no latent variable are modeled.

17 Actually such an insight could be attained by inspecting the parameters relative to the interactions involving countries and birth years in the model estimated on the pooled sample. However the main value of that model is to test the hypothesis of no change over time, across countries and between genders, which has been refused. Hence, for the sake of simplicity, we chose to model each country separately, leaving all other features of the model unchanged, so to give a clearer and more readily interpretable picture.

18 More precisely, the model we estimated on each country separately includes as unconstrained and "trend" variables time (entered as three linear splines), gender, and their interaction, while the formative indicators of social origin are the following: class, status and education of both parents; a dummy for mother homemakers; and the interaction between the latter and father's status and mother's education.

Table 3 Model fit by country, and in the pooled sample

country	F	df_n	df_d	p
Austria	1.06	142	4308	0.29
Cyprus	1.03	131	2463	0.41
Estonia	0.94	143	3713	0.70
Finland	1.17	142	7141	0.09
France	1.15	143	5958	0.10
Greece	1.12	138	7785	0.17
Norway	1.18	143	6418	0.08
Slovenia	1.15	119	2763	0.14
Sweden	1.12	141	3238	0.16
Switzerland	1.06	143	6636	0.31
United Kingdom	1.09	143	6414	0.22
Belgium	1.28	140	5559	0.01
Croatia	1.31	130	1420	0.01
Israel	1.22	143	3960	0.04
Netherlands	1.25	140	6953	0.02
Bulgaria	1.39	141	4600	0.00
Czech Republic	1.38	126	5957	0.00
Denmark	1.64	137	5680	0.00
Germany	1.56	143	9463	0.00
Hungary	1.44	139	5263	0.00
Ireland	2.03	139	6503	0.00
Italy	1.38	124	1585	0.00
Luxembourg	1.48	114	1697	0.00
Poland	1.39	140	5484	0.00
Portugal	1.82	140	7366	0.00
Russia	1.53	139	4143	0.00
Slovakia	1.61	138	4628	0.00
Spain	1.35	139	6500	0.00
Ukraine	1.87	142	4427	0.00
All countries	*1.52*	*4673*	*148024*	*0.00*

Switzerland) and two Southern European countries (Greece, Cyprus), while the three remaining Southern countries (Italy, Portugal, Spain) are among those for which the model does not fit.

Though the model has been refused in most of the countries, it can be instructive to examine some of its details. Fig. 2 and 3 show the parameter estimates and their confidence intervals by country and type of family of origin; the coefficient of father's education equals 1, while the weights of the other resources are expressed in relation to it. Thus a weight of, say, 0.14 for father's status means that the influence of the latter resource weighs 14% of the influence of father's education. In both Fig. 2 and 3, we ranked countries according to GDP per capita, in an attempt to highlight any regularity linked to this structural feature[19].

At a first glance, we see that in dual-earner families (panel a of Fig. 2) the weight of paternal resources varies more than in male breadwinner ones (panel b of Fig. 2), thus pointing to the fact that in the former type of family of origin the resource mix is more varied and hence

19 Van Doorn et al. (2013) found that GDP per capita has the largest influence on educational achievement among the structural features they considered. Unlike van Doorn and colleagues, we did not include GDP per capita in our model, rather we use it here as a criterion variable to uncover possible correlations between the pattern shown by the coefficients and a structural feature at a country level.

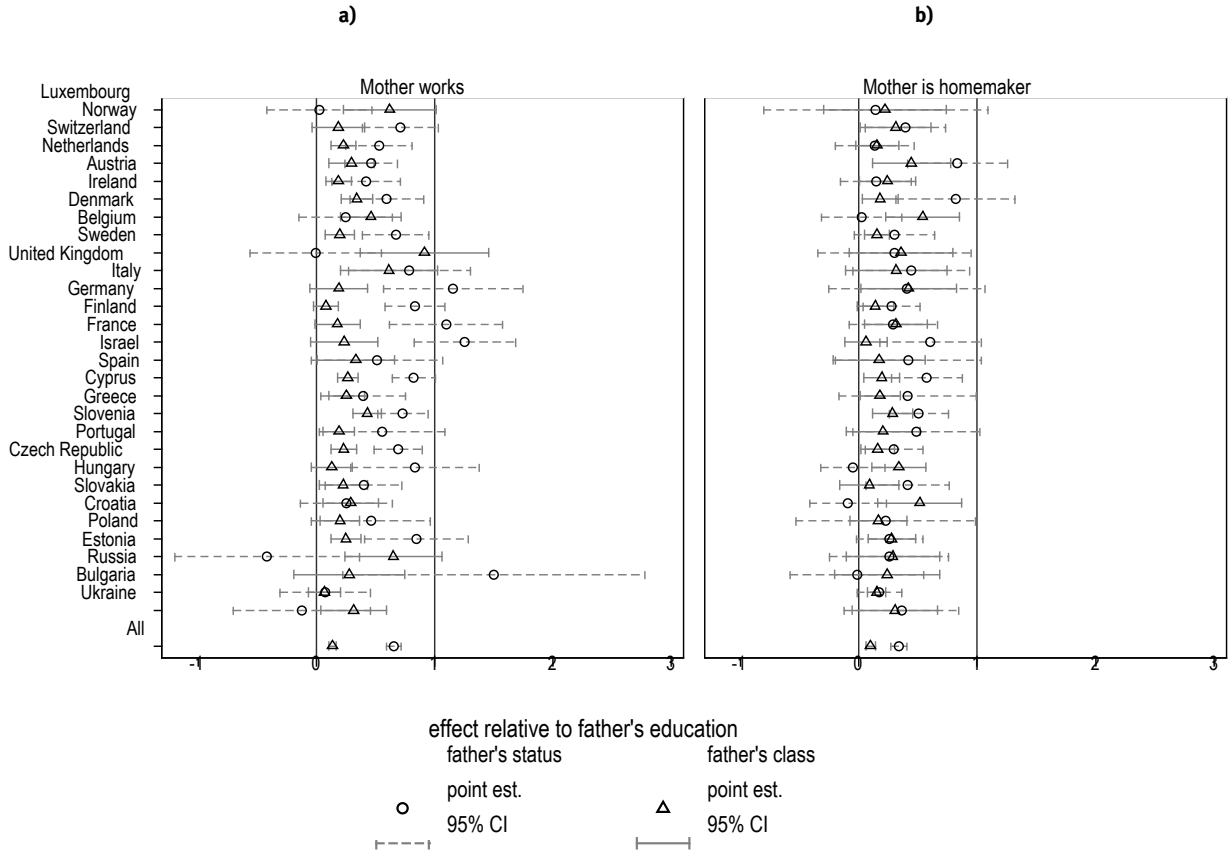


Figure 2 Effects of father's class and status, relative to father's education, by country and type of family of origin

parental influence on children's education may take many paths. The same is not true in male breadwinner families, where maternal education is the only resource adding to paternal ones.

Generally speaking, in dual-earner families of origin father's status has a greater weight, in forming the family resource mix, than father's class; its relevance is higher than that of father's education, represented by the vertical line at x=1, in some countries of medium-high GDP (Italy, where the model does not fit; Finland, and France, where it fits), as well as in Estonia (where the model fits, but the GDP per capita is much lower). In male breadwinner families of origin, this is never the case: though father's status is almost always more relevant than father's class, it is never more relevant than his education. As a general remark, and keeping in mind that these results come from a model that does not adequately represent our data, we note that in many former-soviet countries (Bulgaria, Croatia, Poland, Russia, Ukraine, together with Estonia, where the model fits) paternal status and class weigh about the same, while at the same time they are rather less relevant than his education in forming the mix of resources that compose social origin.

Regarding maternal resources (Fig. 3), we note that in dual-earner families of origin mother's education is almost always the most important resource, after father's education. Actually in some countries maternal education weighs as much as, or more than, paternal education (Estonia and Cyprus, among the countries in which the model fits; Croatia, Ireland, Israel and Hungary among the others). As in the father's case, maternal status is generally more influential than class, however not so in some former-communist countries (Bulgaria, Estonia, Hungary, Poland, Ukraine), as well as in Italy and Belgium.

In the case of male breadwinner families of origin, mother's education is often as important as father's education (in Cyprus, Estonia, Sweden, Finland and France, among the fitting countries; Belgium, Israel, Poland and Russia among the non-fitting ones). Furthermore, a homemaker mother is a resource in itself, over and above the influence exerted by her education; however the uncertainty surrounding these estimates is generally high, hence only in a few countries the coefficient is significant (Greece, Sweden and UK among the countries where the model fits; Ireland, Portugal and Spain, among those in which it does not fit).

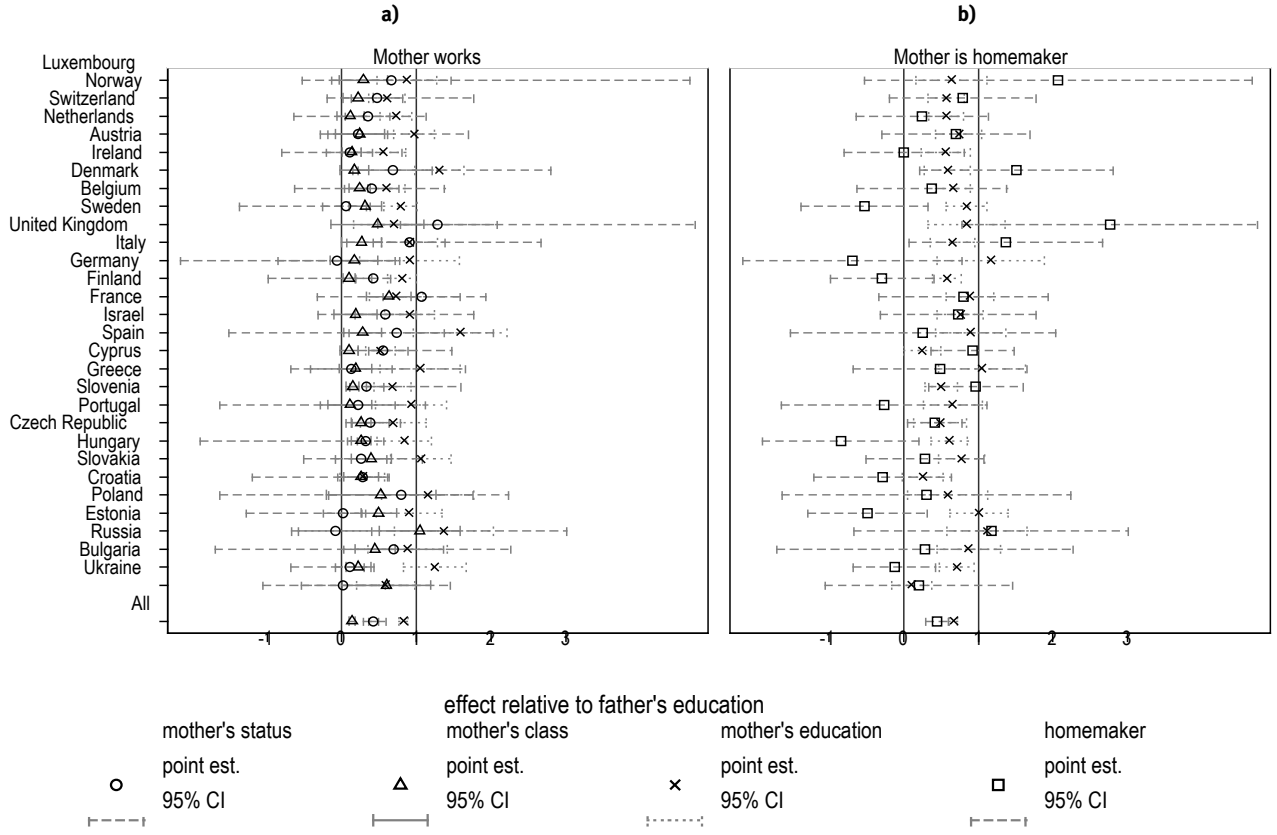


Figure 3 Effects of mother's class, status and education, relative to father's education, by country and type of family of origin

However interesting these results are, they come from an unfitting model, and are hardly summarized by any general pattern grouping countries in meaningful ways. Hence they could suggest further lines of enquiry, but they do not provide sound evidence on the interplay of factors that compose the influence of social origin on educational attainment in most of the countries we analysed.

At the same time, our results single out a subset of 11 countries in which our model fits. Most notably, the key feature that these countries share is that – whatever the country-specific composition of the resource mix forming social origin – it did not change over time and in respect to gender. In other words, the balance between class, status and education remained stable over most of the 20th century, as well as the relevance of maternal and paternal contribution to the resource mix indexing social origin.

This result is particularly noteworthy since it implies that, in the 11 countries, all three components and both parents exerted a specific influence – albeit with variations across countries, which we will illustrate in short – over the entire period under observation. Hence, before even considering the details of the models and the specificity of each country, it can be said that using only one type of resource (either class, status, or education) or only one parent (typically, the father) to index social origin exposes the researcher to draw biased conclusions concerning the IEO trend over the 20th century – this holding for the 11 countries in which the estimated model fits.

The parameter estimates concerning all countries are shown in Tab. 4; these are the same coefficients shown in Fig. 2 and 3, that we already commented on. Nonetheless, we wish to return to these estimates once again for looking more thoroughly at the subset of countries in which the model fits. We will focus on the significant coefficients, however Tab. 4 displays all parameters, in order to provide the reader with full information on our analysis; recall that the weight of each resource is relative to that of father's education, thus it can be interpreted as a percentage relative to it.

9.2 The Resource Mix: Which Parent?

In accordance with expectation 3.1, in the 11 countries we are analysing, mothers have a specific role, both in male breadwinner and in dual-earner families. As Tab. 4 shows, mother's education is relevant in all countries and in both

Table 4 Effect of the formative indicators (γ_k) relative to father's education on the latent social origin variable, by type of family of origin (individual countries samples; parameters and standard errors)

	Dual-earner					Male breadwinner			
	Father		Mother			Father		Mother	
	Status	Class	Status	Class	Education	F's status	F's class	M's education	Home maker
Austria	0.14	0.24	0.11	0.14	0.56	0.42	0.19	0.56	0.01
	0.15	*0.12*	*0.16*	*0.07*	*0.17*	*0.15*	*0.05*	*0.15*	*0.41*
Cyprus	0.41	0.18	0.13	0.19	1.05	0.40	0.26	1.05	0.49
	0.30	*0.09*	*0.28*	*0.11*	*0.30*	*0.18*	*0.08*	*0.28*	*0.60*
Estonia	0.25	0.29	-0.09	0.11	1.11	-0.42	0.65	1.37	1.17
	0.26	*0.20*	*0.25*	*0.27*	*0.27*	*0.40*	*0.21*	*0.34*	*0.94*
Finland	0.29	0.31	1.07	0.48	0.89	1.10	0.18	0.73	0.80
	0.19	*0.14*	*0.26*	*0.15*	*0.16*	*0.24*	*0.10*	*0.18*	*0.58*
France	0.60	0.06	0.59	0.11	0.76	1.26	0.24	0.91	0.73
	0.19	*0.14*	*0.26*	*0.15*	*0.16*	*0.24*	*0.10*	*0.18*	*0.58*
Greece	0.51	0.28	0.34	0.31	0.50	0.73	0.43	0.68	0.97
	0.13	*0.09*	*0.11*	*0.04*	*0.11*	*0.11*	*0.06*	*0.12*	*0.32*
Norway	0.39	0.31	0.47	0.10	0.57	0.71	0.19	0.61	0.79
	0.17	*0.15*	*0.18*	*0.10*	*0.12*	*0.16*	*0.11*	*0.12*	*0.50*
Slovenia	0.49	0.20	0.22	0.49	0.66	0.56	0.19	0.93	-0.26
	0.27	*0.16*	*0.26*	*0.15*	*0.20*	*0.27*	*0.07*	*0.24*	*0.70*
Sweden	0.30	0.36	1.28	0.45	0.84	0.00	0.92	0.70	2.76
	0.33	*0.22*	*0.41*	*0.32*	*0.26*	*0.28*	*0.28*	*0.28*	*1.01*
Switzerland	0.13	0.15	0.35	0.26	0.57	0.53	0.23	0.73	0.25
	0.17	*0.09*	*0.15*	*0.09*	*0.12*	*0.14*	*0.05*	*0.11*	*0.45*
United Kingdom	0.44	0.31	0.91	0.60	0.65	0.79	0.61	0.91	1.37
	0.25	*0.22*	*0.24*	*0.14*	*0.15*	*0.26*	*0.21*	*0.19*	*0.66*
Belgium	0.30	0.15	0.06	0.19	0.84	0.67	0.20	0.79	-0.52
	0.17	*0.05*	*0.16*	*0.11*	*0.14*	*0.14*	*0.06*	*0.12*	*0.43*
Croatia	0.23	0.16	0.79	0.63	0.59	0.46	0.20	1.15	0.30
	0.39	*0.12*	*0.49*	*0.37*	*0.27*	*0.26*	*0.09*	*0.32*	*0.99*
Israel	0.42	0.17	0.74	0.24	0.89	0.52	0.34	1.58	0.26
	0.32	*0.20*	*0.33*	*0.13*	*0.24*	*0.28*	*0.17*	*0.32*	*0.91*
Netherlands	0.83	0.44	0.22	0.24	0.74	0.46	0.30	0.97	0.70
	0.22	*0.17*	*0.20*	*0.17*	*0.16*	*0.11*	*0.10*	*0.14*	*0.51*
Bulgaria	0.17	0.15	0.11	1.05	0.71	0.08	0.07	1.25	-0.12
	0.10	*0.04*	*0.10*	*0.08*	*0.12*	*0.19*	*0.07*	*0.21*	*0.28*
Czech Republic	-0.05	0.34	0.32	0.15	0.61	0.83	0.13	0.84	-0.84
	0.14	*0.12*	*0.13*	*0.07*	*0.12*	*0.28*	*0.09*	*0.19*	*0.54*
Denmark	0.03	0.54	0.40	0.22	0.66	0.25	0.46	0.60	0.38
	0.17	*0.16*	*0.19*	*0.07*	*0.12*	*0.20*	*0.13*	*0.13*	*0.51*
Germany	0.28	0.14	0.42	0.27	0.58	0.83	0.08	0.81	-0.29
	0.12	*0.08*	*0.12*	*0.04*	*0.10*	*0.13*	*0.05*	*0.10*	*0.35*
Hungary	0.41	0.09	0.26	0.52	0.78	0.40	0.23	1.06	0.29
	0.18	*0.13*	*0.18*	*0.14*	*0.16*	*0.16*	*0.10*	*0.21*	*0.40*
Ireland	0.82	0.18	0.68	0.28	0.59	0.60	0.34	1.31	1.51
	0.26	*0.08*	*0.27*	*0.10*	*0.16*	*0.16*	*0.07*	*0.17*	*0.66*
Italy	0.41	0.42	-0.06	0.22	1.17	1.16	0.19	0.91	-0.69
	0.32	*0.20*	*0.33*	*0.13*	*0.24*	*0.28*	*0.17*	*0.32*	*0.91*

continued **Table 4** Effect of the formative indicators (γ_k) relative to father's education on the latent social origin variable, by type of family of origin (individual countries samples; parameters and standard errors)

	Dual-earner					Male breadwinner			
	Father		Mother			Father		Mother	
	Status	Class	Status	Class	Education	F's status	F's class	M's education	Home maker
Luxembourg	0.14	0.22	0.66	0.26	0.64	0.03	0.62	0.87	2.07
	0.48	*0.26*	*0.41*	*0.17*	*0.24*	*0.23*	*0.20*	*0.20*	*1.32*
Poland	0.26	0.28	0.02	0.40	1.01	0.85	0.25	0.90	-0.48
	0.14	*0.10*	*0.13*	*0.12*	*0.20*	*0.22*	*0.06*	*0.22*	*0.41*
Portugal	0.30	0.16	0.39	0.17	0.49	0.69	0.23	0.69	0.42
	0.12	*0.07*	*0.13*	*0.07*	*0.18*	*0.10*	*0.06*	*0.23*	*0.19*
Russia	-0.02	0.24	0.70	0.17	0.87	1.50	0.28	0.88	0.29
	0.29	*0.23*	*0.34*	*0.14*	*0.22*	*0.65*	*0.24*	*0.27*	*1.01*
Slovakia	-0.09	0.51	0.28	0.29	0.26	0.25	0.29	0.28	-0.28
	0.17	*0.18*	*0.17*	*0.12*	*0.14*	*0.20*	*0.12*	*0.15*	*0.47*
Spain	0.57	0.19	0.55	0.26	0.25	0.82	0.27	0.52	0.92
	0.15	*0.08*	*0.17*	*0.06*	*0.13*	*0.09*	*0.04*	*0.10*	*0.28*
Ukraine	0.36	0.30	0.02	0.10	0.11	-0.12	0.31	0.59	0.20
	0.25	*0.18*	*0.29*	*0.30*	*0.14*	*0.30*	*0.14*	*0.20*	*0.64*

types of family; in male breadwinner families, in some countries all mother's resources matter, while fathers only contribute to the social origin mix through their education, like in Switzerland and the UK.

This means that father's contribution to the process of educational attainment cannot be considered to adequately represent the influence of the family of origin, when it is used as the sole indicator of social origin, as Beller (2013) and Buis (2013) already found.

As we said, a feature that all the countries considered have in common is that mother's education always matters (together with father's education), both in male breadwinner and in dual-earner families of origin. Actually mother's education is the second most relevant resource, after father's education, in 8 of the 11 countries, three exceptions being Finland, Sweden and the UK, where maternal status – instead than education – comes second after father's education.

Expectation 3.2 is confirmed in 9 out of 11 countries, since the influence exerted by maternal education is higher in male breadwinner families than in dual-earner ones; in the two remaining countries (Finland and Sweden) the relative weight of mother's education is higher in dual-earner ones. This likely occurs because in male breadwinner families maternal influence has only one possible way to deploy, while in dual-earner ones mothers can exert their influence through all three dimensions that compose social origin.

Actually in male breadwinner families of origin all paternal resources matter, together with mother's education, with the exception of Northern European countries: in Sweden and Estonia father's status, in Finland and Norway father's class give no significant contribution to indexing social origin. As a compensation, in Finland and Norway the paternal influence goes through status (instead of class), while in Sweden it goes through class.

In the case of dual-earner families of origin, in Finland, Switzerland and the UK mother's influence is conveyed by all three types of resources she brings to the family (education, status and class), while mother's class is not relevant in Norway, and father's status is not relevant in Finland.

Greece, Sweden and the United Kingdom stand apart from the rest of the 11 countries as for the relevance of having a homemaker mother as a resource forming the social origin mix. In Sweden this is particularly true, since a homemaking mother has as almost three times the importance as compared to that of father's education.

9.3 The Resource Mix: Class, Status, and Education

In most of the 11 countries we are analysing, all parental resources are relevant in forming the mix that families had at their disposal to influence their children's educational attainment, as anticipated by expectation 1.2. This especially holds in male breadwinner families of origin, while in dual-earner ones some variations across countries are found.

Parental education is the key resource, with father's education being the most influential one (its coefficient being set to 1) in most of the 11 countries, and mother's education coming second. This finding confirms our expectation 1.3, according to which parental education is more relevant than parental class or status; in turn, this means that the cultural component of social origin (as indexed by parental education) has been the driving force in the educational attainment process over the last century, as long as social origin exerted any influence over that process (as we will see later on), and only in the subset of countries in which our model fits. As a matter of fact, in some countries (namely, Austria, Cyprus and Estonia) parental education is the only kind of resource which matters; indeed in Estonia mother's education is the most influential resource above all (reaching 137% of the influence of father's education).

Mother's class adds to the mix in Slovenia and Switzerland, while in the latter country also mother's status matters. Unlike other countries, and on top of parental education, in France it is parental status which matters, while parental class does not.

On the other hand the economic component, as indexed by parental class, seems to have played a lesser role in shaping the educational attainment process. The weight of father's class ranges from 15% to 36% (respectively, in Switzerland and Sweden) compared to that of father's education, while it gets as low as 6% of the weight of father's education in France. Indeed its contribution to the resource mix is relevant only in 3 out of 11 countries (Finland, Greece and Norway). The role of paternal class is certainly more relevant in male breadwinner families of origin, in which parents can count on a less varied mix of resources, given that mothers do not have a paid job, and hence cannot contribute with economic and symbolic resources of their own. For what concerns maternal class in dual-earner families of origin, its weight is significant, as compared to father's education, in 5 out of 11 countries (Finland, Greece, Slovenia, Switzerland and the UK, in the latter country reaching 60% of the weight of paternal education).

In the case of status the pattern is much the same: in dual-earner families, father's status is generally less relevant (as compared to father's education) than in male breadwinner ones. As for maternal status, its weight is on average higher than that of maternal class, with the exception of Slovenia, where class weighs 49% as compared to father's education, while maternal status is only 22% the weight of paternal education.

The consequences of these findings for the way in which social origin should be operationalized are clear. As we have shown, parental resources cumulate in forming the mix which families have at their disposal for influencing their offspring's educational attainment, as Beller (2009) and Buis (2013) already found. As a logical consequence, and in accordance with expectation 3.1, we can affirm that in the countries under analysis mothers have a specific role, both in male breadwinner and in dual-earner families, though with some differences in the two cases.

This also means that father's contribution to the process of educational attainment cannot be regarded as adequately representing the influence of the family of origin, when used as the sole indicator of social origin. At the very least, as we just noted, mother's education should routinely be taken into account, given its prominence as an indicator of social origin.

Actually, using father's class does not appear to be an adequate choice, especially for modelling the influence of social origin on education in dual-earner families of origin, where its relevance is often lower than that of paternal education and status. As women's participation to the labour market increases – as it is already happening since some decades in most post-industrial countries – the use of father's class as the sole indicator of social origin may introduce a substantial bias in our conclusions about the IEO dynamics. A better choice would be the dominance method; however, given that mothers do matter on their own account, and as long as women will continue holding on average less "dominant" jobs than men, that would continue to be a less-than-optimal choice.

Should we be forced to choose a single indicator of social origin, given that parental education is the key factor through which the influence of social origin operates, net of parental class and social status, our best choice would be to use both parents' education. Apart from being motivated by empirical findings, this choice offers the additional advantage of solving *de facto* all methodological concerns about how to include in the analysis mothers who did not have a paid job when the respondent was 14 y.o.

9.4 The IEO Trend Over Time

Still analysing the countries in which our model fits, we now turn to consider whether the influence of social origin on education decreased over time. Tab. 5 shows the parameter estimates relative to the three linear splines by country, which cover the period under observation, from 1893 to 1987. The coefficients in Tab. 5 (panel a) refer to the influence of father's education on their children educational attainment; since all parameters concerning

Table 5 IEO over time by gender and country (linear splines; standard errors in italics)

	a)				b)		
	Time			Gender	Time × Gender		
	1893-1940	1941-1960	1961-1987	(W=1)	Women 1893-1940	Women 1941-1960	Women 1961-1987
Austria	-1,82	-0,74	-0,16	1.09	1.51	0.27	-0.43
	0,79	*0,45*	*0,44*	*1.72*	*1.01*	*0.59*	*0.60*
Cyprus	-3,77	-2,47	-0,19	7.70	7.27	0.63	-1.13
	3,84	*0,85*	*0,38*	*5.45*	*4.36*	*1.02*	*0.52*
Estonia	-1,27	-0,53	0,47	0.13	0.35	0.19	0.11
	0,63	*0,27*	*0,25*	*1.07*	*0.71*	*0.33*	*0.30*
Finland	-0,24	-1,36	-0,77	-0.95	-0.34	-0.33	0.77
	0,36	*0,24*	*0,19*	*0.92*	*0.55*	*0.30*	*0.26*
France	-1,02	-0,74	-0,34	2.49	1.27	-0.28	-0.13
	0,61	*0,27*	*0,23*	*1.17*	*0.76*	*0.36*	*0.30*
Greece	0,64	-1,76	-0,45	-1.26	0.88	1.17	-0.42
	0,82	*0,44*	*0,39*	*1.68*	*1.05*	*0.57*	*0.47*
Norway	-0,05	-1,03	0,35	0.96	0.75	0.01	-0.52
	0,38	*0,22*	*0,20*	*0.83*	*0.51*	*0.30*	*0.28*
Sweden	-1,12	-1,12	-0,24	0.07	0.22	-0.38	0.47
	0,55	*0,34*	*0,22*	*1.18*	*0.81*	*0.38*	*0.32*
Slovenia	0,59	-0,51	-0,83	-1.65	-1.21	0.58	-0.16
	0,71	*0,42*	*0,35*	*1.65*	*0.99*	*0.58*	*0.50*
United Kingdom	-1,22	-0,07	-0,20	2.90	1.49	-0.39	-0.31
	0,45	*0,29*	*0,26*	*1.07*	*0.59*	*0.37*	*0.33*
Switzerland	-0,58	-0,75	-0,10	0.35	0.55	0.12	0.35
	0,42	*0,29*	*0,33*	*0.99*	*0.57*	*0.39*	*0.43*
Belgium	-0,95	-1,25	0,00	1.74	1.43	-0.17	-0.34
	0,48	*0,29*	*0,21*	*1.10*	*0.67*	*0.36*	*0.30*
Croatia	-1,90	-1,80	0,18	2.57	0.94	-0.15	0.27
	1,95	*0,66*	*0,43*	*3.37*	*2.58*	*0.80*	*0.59*
Israel	0,96	-0,58	-0,37	-0.89	-0.97	0.05	0.00
	0,52	*0,26*	*0,19*	*1.27*	*0.87*	*0.35*	*0.27*
Netherlands	-0,52	-1,13	-0,18	0.96	1.06	0.45	-0.07
	0,66	*0,29*	*0,32*	*1.16*	*0.80*	*0.37*	*0.39*
Bulgaria	0,72	-1,91	0,48	-2.82	-1.46	0.93	0.53
	1,02	*0,41*	*0,32*	*1.70*	*1.17*	*0.48*	*0.40*
Czech Republic	-0,84	-0,89	0,26	1.68	0.79	0.34	-0.71
	0,67	*0,39*	*0,38*	*1.35*	*0.82*	*0.53*	*0.52*
Germany	-0,61	-0,19	-0,35	0.22	-0.05	-0.03	0.17
	0,37	*0,20*	*0,25*	*0.85*	*0.52*	*0.30*	*0.34*
Denmark	-1,24	-0,56	-0,05	2.39	1.29	-0.57	-0.18
	0,41	*0,24*	*0,26*	*0.93*	*0.56*	*0.34*	*0.37*
Spain	-0,18	-1,01	-1,04	-0.39	1.68	0.83	0.27
	0,66	*0,42*	*0,30*	*1.67*	*0.93*	*0.58*	*0.42*
Hungary	-2,06	-0,39	0,28	1.71	0.95	-0.27	0.42
	0,64	*0,26*	*0,26*	*1.09*	*0.74*	*0.38*	*0.36*
Ireland	-0,05	-0,75	-0,58	2.12	1.53	-0.29	-0.07
	0,57	*0,29*	*0,21*	*1.08*	*0.70*	*0.36*	*0.28*
Italy	-0,14	-1,09	-0,94	-0.14	-0.47	-0.32	-0.36
	1,39	*0,64*	*0,49*	*2.43*	*1.68*	*0.73*	*0.66*

continued **Table 5** IEO over time by gender and country (linear splines; standard errors in italics)

	a)				b)		
	Time			Gender	Time × Gender		
	1893-1940	1941-1960	1961-1987	(W=1)	Women 1893-1940	Women 1941-1960	Women 1961-1987
Luxembourg	-0,71	-0,70	-1,57	-1.13	1.26	1.02	0.48
	0,96	*0,61*	*0,64*	*2.69*	*1.59*	*0.92*	*0.84*
Poland	-0,86	-0,90	0,49	0.06	0.18	0.17	-0.25
	0,55	*0,25*	*0,22*	*1.11*	*0.74*	*0.33*	*0.29*
Portugal	0,36	-0,19	-0,59	0.59	1.36	1.02	-0.51
	0,92	*0,44*	*0,43*	*1.75*	*1.14*	*0.60*	*0.56*
Russia	-1,12	-1,12	-0,24	0.39	-0.73	-0.63	0.35
	0,55	*0,34*	*0,22*	*1.35*	*1.02*	*0.39*	*0.34*
Slovak Republic	-2,26	0,15	0,72	4.44	1.89	-1.33	-0.22
	1,14	*0,57*	*0,38*	*2.43*	*1.57*	*0.74*	*0.52*
Ukraine	-3,45	-1,02	0,81	2.79	1.00	-0.93	0.42
	1,51	*0,63*	*0,50*	*2.67*	*1.77*	*0.79*	*0.62*

the weight of the resources forming the social origin mix (see Tab. 4) are expressed in relation to father's education, the influence of all other resources changes over time accordingly to the latter variable. For making clearer the meaning of our results concerning IEO over time, we can also inspect Fig. 4, in which the actual trend over time is shown, still concerning only the subset of 11 countries.

Our results show that IEO decreased over time in all the 11 countries, as our expectation 4.1 anticipated. In the majority of countries (Cyprus, Finland, France, Greece, Norway, Sweden, Switzerland) a significant decrease of inequality was experienced by the cohorts born between 1941 and 1960. In Austria and the UK the actual decrease went to the advantage of the older cohorts (1983-1940), while Slovenia is the only country among the 11 under analysis in which a significant change occurred for the younger ones (1961-1987).

As for the pattern of change over time, as Fig. 4 shows, Austria, Cyprus, France, Estonia, UK, Sweden and Switzerland show a marked decrease between 1893 and 1960, while in the following years the decrease slowed down. Greece and Slovenia stand apart from the other countries, since their older birth cohorts experienced a sharp increase in inequality, followed by a sharp decrease after World War II until 1987. Finally, Norway shows a peculiar pattern, in that the sharp decrease in inequality experienced by the cohorts born between 1941 and 1960 has been followed by an increase (though not statistically significant).

Gender seems not to be a crucial variable in shaping the dynamics of IEO over time (Tab. 5, panel b). Only in the UK the influence of social origin shows a difference between the two genders, giving women an advantage of about 3 years over men[20]. In half of the countries considered the IEO trend over time (as referred to the influence of father's education, as we said) is the same for women and men, while in the other countries the difference becomes significant, however without any discernible pattern over time.

10 Conclusions

In this paper we addressed two distinct issues concerning how social origin is routinely operationalized in stratification studies, and in IEO research in particular. First, we intended to question the assumption that relying on information provided only by respondent's father, thus discarding information on mothers, is a viable way to model social origin. As we discussed in Section 2, adopting the dominance approach (Erikson, 1984) does not make a real difference, at least in the case of the many countries where mothers seldom held a better social position than fathers', when respondents were 14.

Leaving this assumption unquestioned exposes stratification research to the risk of biasing its own results (Beller, 2009; Marks 2014) by drawing a faulty generalization. Indeed, society is not (and neither was

20 However in the UK the disadvantage of women in terms of educational attainment is high, as the parameter in the unconstrained part of the model shows (b=-19.56, s.e.=4.62)

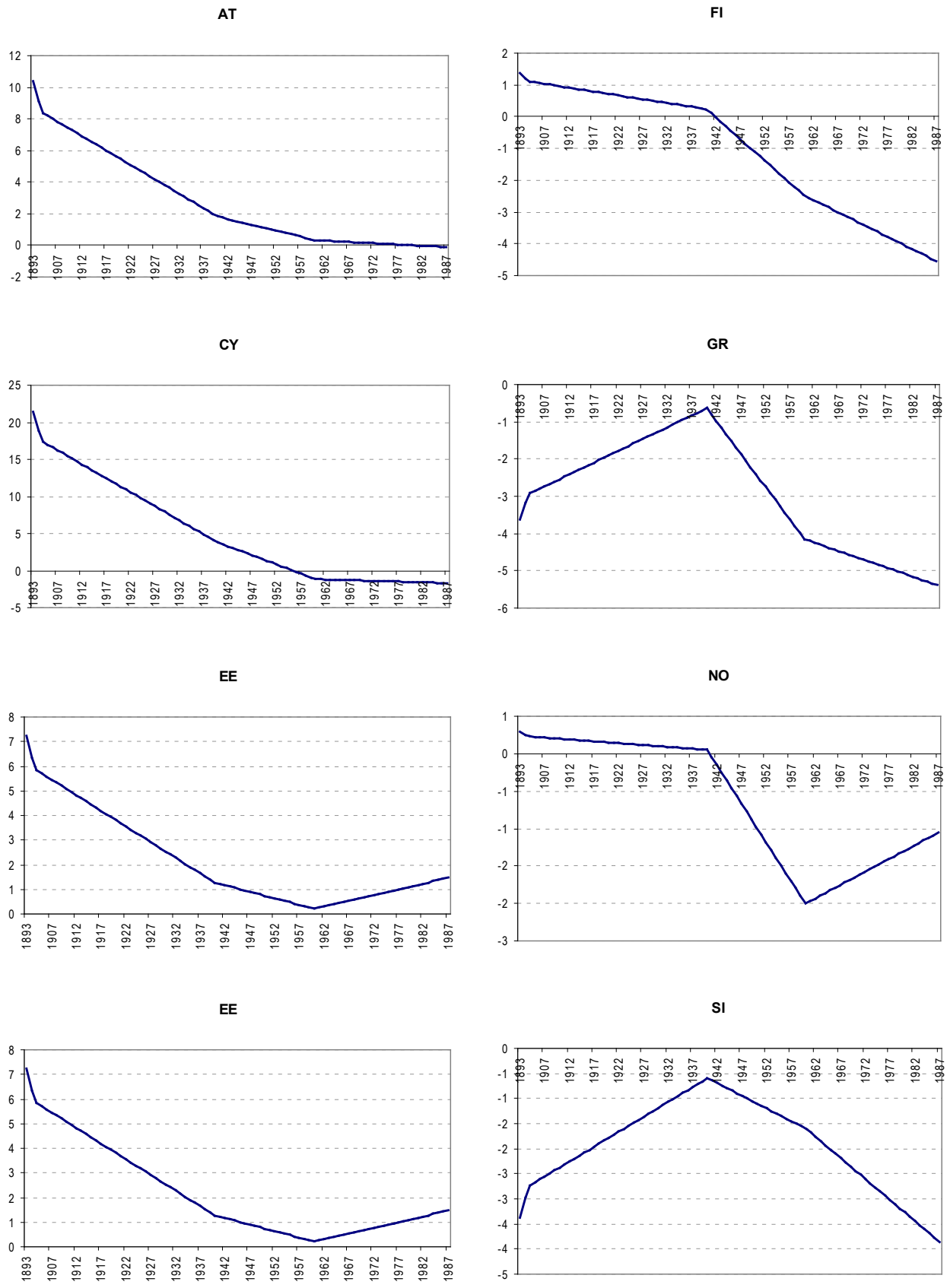
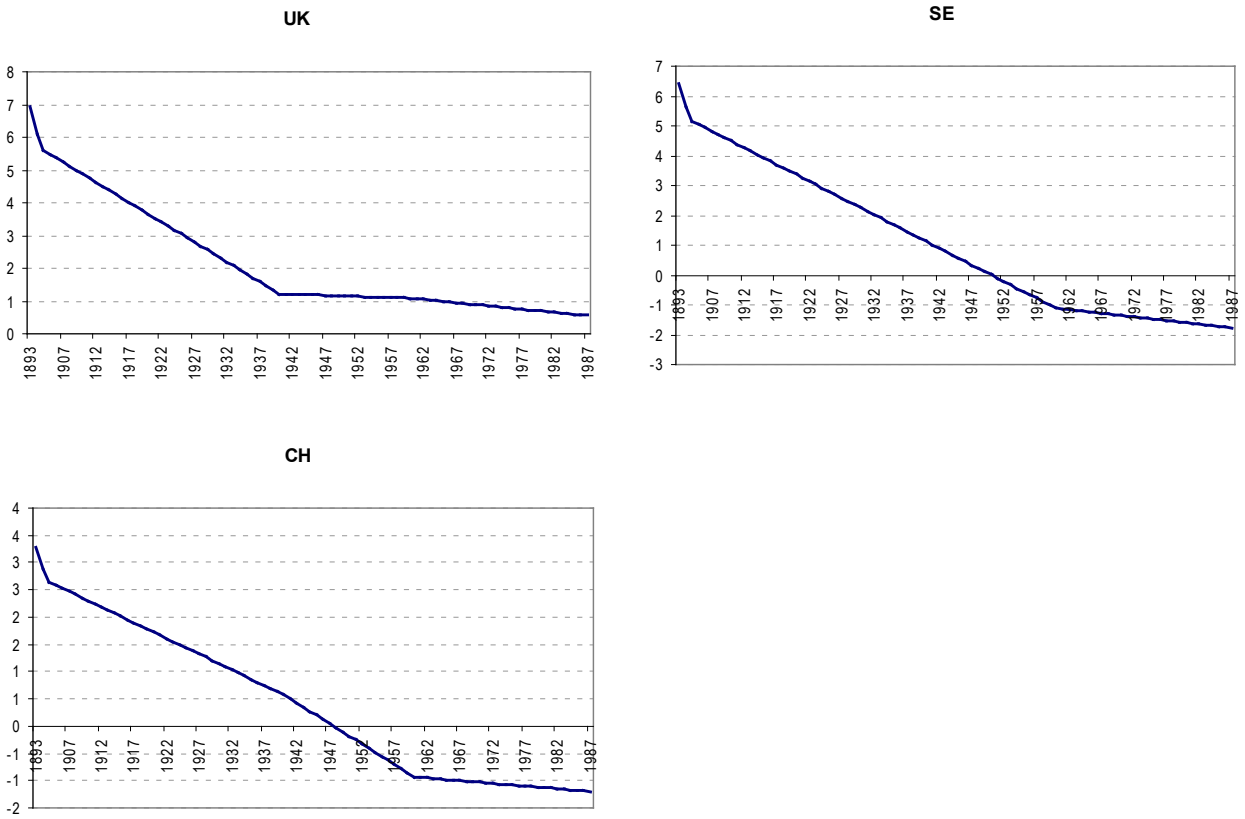


Figure 4 The IEO trend over time in the 11 countries



continued **Figure 4** The IEO trend over time in the 11 countries

in the past) made only of male-breadwinner families; discarding mother's contribution to the process of educational attainment equates precisely to make this assumption, thus wrongly generalizing what is appropriate for one type of respondents (those who grew up in a male breadwinner family) to all respondents (including those who were raised in dual-earner families). Either we stand in defense of the claim that mothers do not matter – a claim which has already been proven as untenable by previous research, and by our own results concerning the 11 countries analysed in more detail; or we effectively consider the family as the proper unit of analysis – a family to which mothers contribute by bringing their resources in.

The second issue we addressed is that of the type of resources through which parents exert their influence on their offspring's educational attainment. Following recent research (Bukodi and Goldthorpe, 2013; Buis, 2013), we expanded the conceptualization of social origin to include three components, namely cultural, symbolic and economic resources measured on both parents. In doing so, our aim was to ascertain whether any of the three components could be used as a synthetic proxy of the others, so to empirically legitimate the usual practice in IEO and stratification research of choosing only one type of resource as a viable indicator of social origin.

Furthermore, we wanted to build on previous evidence also by broadening the time and space boundaries of our study. In fact our data allowed us to examine most of the 20th century (from 1900 to 1986) and to take into account 29 European countries.

The main hypothesis tested by the parametrically weighted regression model was that the composition of the resource mix forming social origin changed over time, across countries and for the two genders (expectation 1). We found evidence for this hypothesis in 18 out of the 29 countries analysed; though it is difficult to group these 18 countries along a discernible dimension, we find most of the former-soviet countries (except Slovenia and Estonia) are found in this group, while the Scandinavian countries are not.

However we believe that the most interesting result comes from the group of 11 countries in which our model holds, and for which we accepted the hypothesis of no change over time and across genders of the relative weight of the resources indexing social origin. Limitedly to these countries, our expectations concerning the role of mothers are met, both in dual-earner and in male breadwinner

families of origin, as well as those relative to the three-fold indexing of social origin by using parental education, social status and class.

As we already anticipated, and following the results concerning the 11 countries we focussed our discussion on, a few conclusions can be drawn. First, the resources through which the influence of the family of origin deploys tend to cumulate, instead of being alternative channels that convey parental influence on education. This conclusion holds for most of the 20th century, since the hypothesis of constant weights among the 3×2 resources indexing social origin has been accepted.

This is particularly important also in light of a second conclusive remark, namely that mothers do contribute in a substantial way to form that resource mix, and did so over the entire period under observation (1893-1987). Leaving them outside the picture means discarding valuable information on how social origin influences educational attainment, hence possibly biasing the results we get to on the historical trend of IEO.

Our third conclusive remark concerns the relative weight of the three dimensions of social origin, namely parental class, status and education. As we have seen, in the subset of 11 countries in which our rather restrictive model fits, education is the most relevant resource in almost all countries and for both parents, and has been so over the most of the last century, while class is – still generally speaking – the least influential one. Hence, in case we had to choose just one indicator of social origin when studying its influence on the educational attainment, we would suggest to choose (both father's and mother's) education, instead of status or class.

As for results concerning the IEO trend over time, we found that it decreased in all the 11 countries more closely analysed, at least from the period after the World War II on. Some differences were found between countries, however we can say that in most of them the cohorts born until the Sixties experienced a more marked decrease, which slowed down afterwards.

On a methodological ground, we note that our model was rather demanding in terms of the constraints imposed on the structure of the data generating process. The hypothesis of constancy of the relative weights of the 3×2 resources not only over time, but also across genders and countries is actually very hard to meet, given the length of the time span considered and the variety of the countries included in our sample. Nonetheless, provided we drop the constraint of constancy across countries, our model singled out a set of countries in which the hypothesis of no change of the relative weights of the resource mix is actually confirmed. We believe this result is noteworthy precisely because the model we used was very demanding, and yet able to highlight a feature that has not come to light yet in previous analyses.

Our results leave room for further investigation and improvements. One of the main weaknesses of our analysis is that we could not find any discernible pattern for the cross-country differences we found, perhaps except that concerning the former-soviet countries (where the resource mix varied over time and between genders) and the Scandinavian ones (where it remained unchanged instead). Hence a possible elaboration of our model would consist in including variables pertaining to macro-features of the countries under analysis, as other scholars did (see for example Muller and Karle, 1993; Pfeffer 2008; van Doorn et al. 2013).

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